

CLAIMS:

1, A surface protecting adhesive film for a semiconductor wafer wherein an adhesive layer having a storage elastic modulus from 1×10^5 Pa to 1×10^7 Pa at 150 °C and a thickness of from 3 to 100 μm is formed on both of a surface and back surface of a base film having a melting point of at least 200°C and a thickness of 10 to 200 μm .

2. The surface protecting adhesive film for a semiconductor wafer according to claim 1, wherein the base film comprises at least one resin film selected from a group consisting of a polyethylene terephthalate, a polyethylene naphthalate, a polyphenylene sulfide and a polyimide.

3, A protecting method for a semiconductor wafer in a step of processing a non-circuit-formed surface of a semiconductor wafer comprising a first step of fixing a circuit-formed surface of the semiconductor wafer to a substrate supporting the semiconductor wafer via a surface protecting adhesive film for the semiconductor wafer having an adhesive layer on both a surface and a back surface of a base film, a second step of fixing a non-circuit-formed surface of the semiconductor wafer on a semiconductor wafer grinding machine via the substrate and mechanically grinding the non-circuit-formed surface of the semiconductor wafer, and a third step of removing a damaged layer generated on the non-circuit-formed surface of the semiconductor wafer in sequence, wherein the surface protecting adhesive film according to claim 1 is used as the surface protecting adhesive film for the semiconductor wafer.

4. The protecting method for the semiconductor wafer according to claim 3, wherein the third step comprises at least one step selected from a wet etching step, a plasma etching step and a polishing step.